We claim:

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- A process for separating azeotropic or close-boiling mixtures by means of an extractive rectification in which an ionic liquid is used as entrainer, wherein a high-boiling bottom product is taken off from the column in vapor form via a side offtake.
- 2. A process as claimed in claim 1, wherein the side offtake is positioned in the stripping section of the column in the region of the bottommost three plates, preferably directly at the bottommost plate.
 - 3. A process as claimed in claim 1 or 2, wherein the bottom stream from the column is passed to a work-up stage in which the ionic liquid present is separated off from high boilers still present by vaporization.
 - 4. A process as claimed in any of claims 1 to 3, wherein the bottom stream from the column is passed to a work-up stage in which the ionic liquid present is separated off from high boilers still present by stripping.
- 5. A process as claimed in claim 1 or 2, wherein the bottom stream which has been depleted in high boilers is recirculated to the column, preferably in the enrichment section, particularly preferably onto one of the uppermost 3 plates, very particularly preferably onto the uppermost plate.
- 25 6. A process as claimed in claim 3 or 4, wherein the ionic liquid recovered from the work-up stage is recirculated to the column, preferably in the enrichment section, particularly preferably onto one of the uppermost 3 plates, very particularly preferably onto the uppermost plate.